Cost to Update HEC-5Q Model of the Snake River System

During the previous Snake River HEC-5Q modeling efforts, the lower Snake River reservoirs were represented by single layered and longitudinally segmented elements. This type of model representation is inappropriate during periods of thermal stratification. During more recent HEC-5Q model applications, the option of layering each longitudinal element has been added to the model. Therefore, the current version of HEC-5Q is capable of approximating the thermal stratification within these reservoirs that impact fish passage.

The following work effort is suggested to update the HEC-5Q model of the Snake River so that the thermal impacts of system operation can be more accurately analyzed.

Task 1 Evaluate adequacy of model boundary conditions.

- Meteorological inputs
- Distribution of local inflows
- Tributary inflow temperatures
- Local inflows (it is suggested that the HEC assist the Portland District in creating a DSS data base so that different simulation periods can be analyzed with a minimum of effort)

Task 2 Reconfigure data sets to meet the requirements of the layered HEC-5Q model.

Task 3 Implement the Graphical User Interface (GUI) to aid in calibrations and results presentation

- Install appropriate digital line graphs for GUI basemap
- Import temperature time series and profile data to DSS for GUI display

Task 4 Calibrate model to ambient data

- Stream temperatures above Lower Granite Reservoir
- Temperature profiles within the lower Snake River reservoirs
- Reservoir tailwater temperatures

Task 5 Reporting and Training

- Prepare a brief report documenting the modeling effort
- Conduct a 1-day training session on the use of the model *
- Present the model results at a 1-day meeting *

* Consecutive days In Portland

The estimated total cost, including travel, is $24,800.